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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,382	12/03/2003	Chai Wah Wu	YOR920030399US1	3141

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EXAMINER	
STERRETT, JONATHAN G	

ART UNIT	PAPER NUMBER
3623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/725,382	WU, CHAI WAH	
	Examiner	Art Unit	
	JONATHAN G. STERRETT	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10-16-08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This **Non-Final Office Action** is responsive to 1 October 2008. Currently **Claim 1** is pending. The response to the 1.105 request for information is noted.

Response to Argument

The applicants arguments have been fully considered but are not persuasive.

In response to the applicants arguments regarding the 101 rejection, the claims are not statutory because there is not a tie to another statutory class (such as a particular apparatus).

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 1 is rejected under 35 U.S.C. 101 based on Supreme Court precedent, and recent Federal Circuit decisions, the Office's guidance to examiners is that a § 101 process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. Diamond v. Diehr, 450 U.S. 175, 184 (1981); Parker v. Flook, 437 U.S.

584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v. Deener, 94 U.S. 780,787-88 (1876).

An example of a method claim that would not qualify as a statutory process would be a claim that recited purely mental steps. Thus, to qualify as a § 101 statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state.

Here, applicant's method steps, fail the first prong of the new Federal Circuit decision since they are not tied to another statutory class and can be performed without the use of a particular apparatus. Thus, **Claim 1** is non-statutory.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Muralidhar** et al; "A General Additive Data Perturbation Method for Database Security",

(C) 1999 Institute for Operations Research and the Management Sciences,

Management Science / Vol. 45, No. 10, pp.1399-1415 . (hereinafter **Muralidhar**)

Regarding **Claim 1**, Muralidhar teaches:

A computerized method of conducting a survey, said

method comprising:

establishing, for at least one question in said survey, establishing a bin, as represented in a memory of a computer, for each of a possible response to said question;

page 1408 section 5 and 5.1.

establishing, for each said bin, establishing a perturbing mechanism that perturbs a content of said bin, said perturbing mechanism having a statistical parameter with a known value;

page 1400 column 1 para 1, column 2 para 4, page 1401 para 2.1

generating a perturbed indicator vector that represents a respondent's response for said question, said perturbed indicator vector comprising an information structure including the contents of all bins of said question after each of the bins has been perturbed and said respondent has selected one or more said possible responses,

page 1402 column 1 para 1, Muralidhar teaches perturbing cells in a database to form a new cell (i.e. vector) based on the information in the database that has been

additively perturbed (i.e. a random number that is a statistical parameter has been added to it. See also page 1408 section 5.

wherein said perturbing mechanism comprises a random number generator and said known statistical parameter value comprises a mean value of said random number generator,

see before – particularly page 1401 section 2.1

wherein said generating the perturbed indicator vector comprises respectively adding numbers from the perturbing mechanism to the contents of the bins;

as before, Muralidhar teaches additive perturbation, where a random number is added to the raw data to provide a perturbed data point. Also see page 1404 section 3.2.1.

receiving, as input data to said computer, at least one response to the survey question; generating a perturbed indicator vector by counting the number of marked areas for each response; and

page 1408 section 5 and 5.1

for a plurality of responses for a question in said survey received as input data to said computer, analyzing the bins in said perturbed indicator vector to provide an estimation of a distribution of responses, wherein said analyzing comprises:

for said question being analyzed, calculating an average of each perturbed bin in said question, wherein said perturbing mechanism comprises a random

number generator and said known statistical parameter comprises a mean value, said analyzing further comprising for each said perturbed bin in said question, subtracting said mean value of said perturbing mechanism associated with said bin.

Page 1402 para 2.2.1, Muralidhar calculates an average (i.e. variance) of each perturbed data point (i.e. bin in said question) by subtracting the Y (i.e. perturbed attribute) from the X (i.e. the actual value).

Muralidhar teaches using an additive perturbation method to make data stored as a number of data points (i.e. attributes or bins) in a database (i.e. of a computer system). Muralidhar teaches perturbing data after it has been received and stored as various attributes.

Official Notice is taken that it is old and well known in the art to provide surveys to respondents such that the respondent responds to the surveys by indicating a response to each question as per

setting up a survey question by generating a medium with a plurality of markable areas for each possible response; such that a respondent can respond to the survey question by adding a mark to any of remaining non pre-marked markable areas, if any markable areas remain after said pre-marking, of the plurality of markable areas for the possible response that corresponds to a

desired response to the question; and pre-marking a random number of said markable areas for each said possible response

Since Muralidhar teaches storing of data in a database where the attributes represent individual customer data, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify these teachings to include where the data comes from a survey, because it would have provided a predictable response by storing the data from the survey in a database.

While Muralidhar suggests and teaches data in a database relating to an individual's attributes (Muralidhar explicitly teaches a banking database with individual customer information) and Muralidhar teaches and suggests that the customer data may be made anonymous by an additive perturbing approach, Muralidhar does not teach perturbing the data before it is stored in the database by perturbing the actual answers to the survey questionnaire before they are answered by the respondent.

However, since it is shown in the art that customer data comes from surveys and that this data once stored in a database can be perturbed to preserve anonymity, it would have been obvious to one of ordinary skill in the art to pre-perturb the answers to survey questions (i.e. by premarking the possible answers), because it would have been obvious to try the step of perturbing the data prior to solicitation from an individual, with

the predictable result that the answers to the surveys, as a whole, would have been perturbed. The concepts of survey data from questionnaires and perturbing data that is stored, such as would be provided from those questionnaires, are known techniques in the art. The concept of perturbing data that relates to customer attributes, where privacy is a concern, is old and well known. One of ordinary skill in the art would have found it obvious to try the step of perturbing possible responses to survey questions, prior to the survey being given to an individual, since there is an established need to gather individual data that is useful in understanding customer demographics for marketing and analytical purposes and yet require some kind of masking to protect privacy.

Further, Muralidhar teaches that the perturbation can result in various quartiles (i.e. various dispersion in the data), Muralidhar does not teach an upper or lower bound after perturbation, as per:

if contents of a bin exceed an upper bound after perturbation, said contents are clamped to said upper bound;

if contents of a bins bin are below a lower bound after perturbation, said contents are clamped to said lower bound

Even assuming arguendo that Muralidhar taught an upper and lower bound for clamping after perturbation, Official Notice that it is old and well known in the art to remove outliers in data (i.e. to clamp to an upper or lower bound) and this would have

been obvious to one of ordinary skill in the art, and such would have provided a predictable result in combination with the teachings of Muralidhar, by limiting the dispersion of the data once the statistically based perturbation is performed.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Privacy-preserving data mining

Rakesh Agrawal Ramakrishnan Srikant ; © 2000 ACM, Volume 29 , Issue 2 (June 2000) Pages: 439 - 450

Privacy cognizant information systems

R Agrawal - Conference on Computer and Communications Security: …, 2003 - acm.org

Notes On the Contamination Method -Two Small Experiments in Assuring Confidentiality of Responses, Sociological Methods & Research, Vol. 6, No. 1, 45-62 (1977) DOI: 10.1177/004912417700600102,John Berman, et al. ABSTRACT

“ K-modes Clustering” Anil Chaturvedi, Paul E. Green and J. Douglas Caroll, Journal of Classification, Publisher Springer New York,ISSN 0176-4268 (Print) 1432-1343 Issue Volume 18, Number 1 / January, 2001

US 20050021488 by Agrawal teaches mining association rules over privacy preserving data.

US 20030190045 by Huberman teaches a method for protecting privacy while revealing data

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Sterrett whose telephone number is 571-272-6881. The examiner can normally be reached on 8-6.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on 571-272-6737. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JGS 12-31-08

/Jonathan G. Sterrett/

Primary Examiner, Art Unit 3623